

**REMARKS**

**I. Introduction**

In response to the pending Office Action, Applicants have amended claims 1 and 4 to further clarify the subject matter of the present disclosure. In addition, new claims 10-13 have been added. Support for the amendments to claims 1 and 4 and for new claims 10-13 may be found, for example, in Tables 1-6 of the specification. No new matter has been added.

For the reasons set forth below, Applicants respectfully submit that all pending claims as currently amended are patentable over the cited prior art.

**II. The Rejection Of Claims 1 And 4-9 Under 35 U.S.C. § 103**

Claims 1, 6 and 8 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Inoue (USP 5,707,756); claims 4-5 and 9 as being unpatentable over Inoue in view of Shoichiro et al. (JP 2002-319398); and claim 7 as being unpatentable over Inoue in view of Fernandez et al. (USP No. 5,637,413). Applicants respectfully traverse these rejections for at least the following reasons.

With regard to the present disclosure, independent claims 1 and 4 recite, in-part, a non-aqueous electrolyte secondary battery comprising a positive electrode material mixture layer which comprises a positive electrode active material comprising a lithium transition metal composite oxide, wherein the lithium transition metal composite oxide is represented by the general formula (1):  $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$ , the general formula (1) satisfies  $1.0 \leq x \leq 1.03$  and  $0.005 \leq y \leq 0.15$ , the element M in the general formula (1) is at least two selected from the group consisting of Mg, Al, Ti, Sr, Mn, Ni and Ca.

One feature of the present disclosure is that the lithium composite oxide being represented by the general formula (1):  $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$  is used as the positive electrode active material, where M is at least two selected from the group consisting of Mg, Al, Ti, Sr, Mn, Ni and Ca. As is shown in Tables 1-6 of the specification, all of the batteries 1-29 are comprised of a positive electrode active material in which M is at least two selected from the group consisting of Mg, Al, Ti, Sr, Mn, Ni and Ca.

In contrast, Inoue fails to disclose this limitation. As is shown in col. 11, lines 38-50, none of the positive electrode active materials fall under the general formula (1) wherein M is at least two from the group consisting of Mg, Al, Ti, Sr, Mn, Ni and Ca. Furthermore, the positive electrode active materials listed in col. 11, lines 38-44 do not teach or suggest a formula having Co and two from the above-mentioned group. Moreover, in any combination of elements listed in col. 11, lines 14-28, there is no combination of elements that could be comprised from the list of compounds that would derive a formula having <sup>the</sup> Co and at least two from the group. This is because only Al is listed in the group of other elements that is shared with the claimed group. As such, it is clear that Inoue fails to teach or suggest the elements of claims 1 and 4 of the present disclosure.

Moreover, Shoichiro fails to remedy this deficiency. As is shown in Table 1 of Shoichiro, none of the examples contain positive electrode active mixtures with two or more selected from Mg, Al, Ti, Sr, Mn, Ni and Ca. As is shown, the samples all only contain one from the group.

In order to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. As Inoue and Shoichiro, at a minimum, fail to disclose a non-aqueous electrolyte secondary battery comprising a positive electrode

material mixture layer which comprises a positive electrode active material comprising a lithium transition metal composite oxide, wherein said lithium transition metal composite oxide is represented by the general formula (1):  $\text{Li}_x\text{Co}_{1-y}\text{M}_y\text{O}_2$ , said general formula (1) satisfies  $1.0 \leq x \leq 1.03$  and  $0.005 \leq y \leq 0.15$ , it is submitted that Inoue and Shoichiro do not render claims 1 and 4 obvious. Accordingly, claims 1 and 4 are allowable and as such, it is respectfully requested that the § 103 rejection of claims 1 and 4, and any pending claims dependent thereon be withdrawn.

**III. All Dependent Claims Are Allowable Because The Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

Moreover, new claims 10-11 recite that general formula (1) satisfies  $0.006 < y \leq 0.15$ . As was pointed out in the Office Action, Batteries 24 and 25 do not have results consistent with Batteries 4-23 and 26-29. As such, new claims 10-11 exclude Batteries 24 and 25 from the claimed subject matter. In addition, new claims 12 and 13 recite that general formula (1) satisfies  $0.051 \leq y \leq 0.15$ . This amendment is based on the fact that the value “y” in the positive electrode active materials of Batteries 20 and 21 is 0.051. Table 2 shows that Batteries 16 and 17, in which  $y = 0.015$  and Batteries 24 and 25 ( $y = 0.006$ ) have lower high capacity maintenance rates than the other Batteries within the respective ranges.


**IV. Conclusion**

Having responded to all open issues set forth in the Office Action, it is respectfully submitted that all claims are in condition for allowance.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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